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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,021	11/19/2003	Brian J. Taylor	04AB026/YOD ALBR:0142/YOD	8807
7590 Alexander M. Gerasimow Allen-Bradley Company, LLC 1201 South Second Street Milwaukee, WI 53204-2496			EXAMINER PATEL, DHARTI HARIDAS	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 06/27/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/718,021

**Applicant(s)**

TAYLOR, BRIAN J.

**Examiner**

DHARTI H. PATEL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34, 51-68, 70, 72-74 and 76-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34, 51-68, 70, 72-74 and 76-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 102**

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-26, 64, and 66 are rejected under 35 U.S.C. 102(e) as being anticipated by Knox et al., Publication No. 2004/0252421.**

With respect to Claim 1, Knox discloses a controller for a machine [Fig. 1 digital programmable motor overload protector 1], comprising: a machine mountable base [Fig. 3, the base comprises stacked modules- DSP housing 46, transformer housing 44, and housing base 41; par. 0020, the modular base housing portion] comprising a motor protection device [Fig. 3 the Digital Signal Processor DSP 55 in housing 46; par. 0008]; and a modular control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104] replaceably mountable to the machine mountable base [par. 0030; all components are mounted to housing base 41 and are modularized/replaceable], wherein the modular control unit comprises control circuitry [modular control unit 2 contains microcontroller 75] configured to control the machine [the circuitry of microcomputer 75 allows the user to enter control commands and receive status updates of the motor being controlled- par. 0104-0109. The machine being controlled is the low voltage motor mentioned in paragraph 0002].

With respect to Claim 2, Knox discloses the motor protection device comprises a short-circuit protective device [col. 1 lines 0010 state ground faults are protected against. A ground fault is a type of short circuit condition. For illustrative purposes only, see the EC&M document enclosed. Fig. 4 trip contact relay 66 is a short circuit protective device that works in conjunction with the DSP; par. 0101. Line fuses 68 also provide short circuit/overload protection par. 0102].

With respect to Claim 3, Knox discloses the short-circuit protective device comprises an instantaneous trip [par. 0101, no time delay in tripping is specified, therefore the trip occurs instantaneously].

With respect to Claim 4, Knox discloses the short-circuit protective device comprises a magnetic circuit breaker [Fig. 4 trip contact 66 comprises a magnetic coil].

With respect to Claim 5, Knox discloses the motor protection device comprises a disconnect device [par. 0101; disconnect occurs via trip contact relay 66 which controls the on/off of the users motor contactor/circuit breaker].

With respect to Claim 6, Knox discloses the disconnect device comprises a local lockout [par. 0101- failsafe trip contact control circuit 65 electrically resets the users motor contactor/circuit breaker if it senses a failure in the DSP; and par. 0095 lines 16-22- reset supervisor 64 electrically locks out the DSP if operating conditions are unreliable; par. 0147- software will lockout the trip contacts from being reset].

With respect to Claim 7, Knox discloses the modular control unit comprises an overload protection device and a contactor [Fig. 4 trip contact relay 66 is an overload protection device that works in conjunction with the DSP 55, par. 0101].

With respect to Claim 8, Knox discloses the modular control unit comprises a programmable electronic overload [the device is a digital programmable motor overload relay; par. 0002; par. 0109 programming inputs entered through interface keypad 6].

With respect to Claim 9, Knox discloses the modular control unit comprises an electromagnetic contactor [Fig. 4 trip contact relay 66 with coil].

With respect to Claim 12, Knox discloses the modular control unit comprises a motor connection terminal [Fig. 3 trip contacts 33 connects to the users motor contactor/circuit breaker circuit].

With respect to Claim 13, Knox discloses the machine mountable base comprises a network terminal [par. 0147 lines 8-11; par 0027].

With respect to Claim 14, Knox discloses the machine mountable base comprises at least one sensor terminal [Fig. 3 terminal 36 connecting to current transformer 37; par. 0090].

With respect to Claim 15, Knox discloses the machine mountable base comprises at least one actuator terminal [Fig. 3 trip contacts 33].

With respect to Claim 16, Knox discloses a motor controller [Fig. 1 digital programmable motor overload protector 1], comprising: a motor mountable base [Fig. 3, the base comprises stacked modules- DSP housing 46, transformer housing 44, and housing base 41; par. 0020, the modular base housing portion] comprising a short-circuit tripping disconnect [Fig. 4 trip contact relay 66 is a short circuit protective device that works in conjunction with the DSP 55]; and a replaceable control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104; the module is

replaceable] removably coupled to the motor mountable base, wherein the replaceable control unit comprises control circuitry [modular control unit 2 contains microcontroller 75] configured to control a motor [the circuitry of microcomputer 75 allows the user to enter commands and receive status updates of the motor being controlled- par. 0104-0109. The machine configured to be controlled is any of the low voltage motors mentioned in paragraph 0002].

With respect to Claim 17, Knox discloses the short-circuit tripping disconnect comprises a magnetically tripping disconnect [Fig. 4 trip contact 66 comprises a magnetic coil].

With respect to Claim 18, Knox discloses the short-circuit tripping disconnect comprises a disconnect lockout [par. 0101- disconnect occurs via trip contact relay 66 which controls the on/off of the users motor contactor/circuit breaker. Failsafe trip contact control circuit 65 electrically resets the users motor contactor/circuit breaker if it senses a failure in the DSP; and par. 0095 lines 16-22- reset supervisor 64 electrically locks out the DSP if operating conditions are unreliable; par. 0147- software will lockout the trip contacts from being reset].

With respect to Claim 19, Knox discloses the motor mountable base comprises at least one communication terminal [par 0027].

With respect to Claim 20, Knox discloses that the at least one communication terminal comprises a machine network terminal adapter to facilitate networking of a plurality of machine components [par. 0027].

With respect to Claim 21, Knox discloses the replaceable control unit comprises an adjustable overload [the device is a digital programmable motor overload relay and therefore adjustable; par. 0002; par. 0109 programming inputs entered through interface keypad 6] and a contactor [Fig. 4 trip contact relay 66].

With respect to Claim 24, Knox discloses the replaceable control unit comprises at least one monitoring device [Fig. 3 terminal 36 connecting to current transformer 37; par. 0090].

With respect to Claim 25, Knox discloses the replaceable control unit comprises at least one diagnostic device [par. 0212 Table U3- FAIL DIAG code signals internal DSP diagnostic failure].

With respect to Claim 26, Knox discloses the replaceable control unit comprises at least one manual control mechanism [par. 0147 critical failure will result in a lockout. Par. 0215 Table U6 commands UAR and OAR- manual reset is required to clear the trip, Fig. 1 button 7, par. 0015].

With respect to Claim 64, Knox discloses that the modular (motor) control unit comprises an output connector configured to couple with the machine/at least one of the machines [Fig. 2, the output connector is on the bottom surface of user interface 2, which detachably connects to user interface pedestal 22 in the remote mount configuration, par. 0087 and 0088. The male portion of the connector is shown in Fig. 2 as comprising 16, 23, and 24. The motor being controlled/protected is the "at least one of the machines].

With respect to Claim 66, Knox discloses that the replaceable control unit comprises an output connector configured to couple with the motor [the output connector is coupled to the motor via transmission through the user interface umbilical 21, Fig. 2].

**Claims 1, 16, 27, 31, 34, and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al., U.S. 6,388,563.**

With respect to Claims 1, 16 and 51, Haudry discloses a machine, comprising: a motor [col. 1 lines 17-25]; and a motor controller [Fig. 1, 100; col. 1 lines 46-52], comprising: a modular base [Fig. 1, 300] comprising motor protection circuitry [col. 9 lines 3-14]; such as a short circuit tripping disconnect [col. 10 lines 15-23] which is mounted in the base; and a modular motor control unit [Fig. 1, 200] coupled to the modular base [col. 2 lines 24-45] and comprising motor control circuitry [col. 3 lines 36-44] cooperatively operable with the motor protection circuitry, wherein the modular motor control unit is selectively replaceable from a plurality of different types of motor control units [col. 7 lines 55-62; col. 8 lines 8-12; col. 8 lines 21-31].

With respect to claims 27, 31, and 34, Brown discloses a controller for a machine system [col. 3 lines 5-15], comprising: an on-machine base [Fig. 1, 300] comprising a machine protection device [Fig. 1, 200]; and a control unit [Fig. 6, the master control emergency stop module; col. 7 lines 60-62, see col. 7 lines 15-63] comprising control circuitry [col. 9 lines 3-14; col. 9 lines 66-67 and col. 10 lines 1-11] configured to control at least one machine in the machine system, wherein the control unit is selectable from a plurality of different types of control units having different types of control circuitry [col.



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7 lines 55-62; col. 8 lines 8-12; col. 8 lines 21-31], the control unit is replaceably mountable to the on-machine base, and the on-machine base and the control unit are cooperative to provide desired on-machine controllability.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 10-11, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knox et al, Publication No. US 2004/0252421, in view of Hollenbeck, Patent No. 5,557,182.**

With respect to Claims 10 and 22, Knox teaches the controller of Claims 1 and 16 respectively, but does not teach a soft start machine controller. Hollenbeck teaches a control unit that comprises a soft start machine controller [col. 12 lines 13-14].

Knox and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify soft start control capability to Knox, as taught by Hollenbeck, for the purpose of including the benefits of soft start control to the motor. Soft start capability is desirable to prevent stressing the power supply as well as the motor windings from sudden loading, which is well known to shorten the lifespan of electrical equipment.

With respect to Claims 11 and 23, Knox teaches the controller of Claims 1 and Claims 16 respectively, but does not teach a variable frequency machine drive. Knox's programmable device is implicitly capable of controlling/protecting any motor in general [par. 0002; par 0010], including a variable frequency machine drive. However, this is not elaborated upon in the specification.

Hollenbeck teaches a control unit for a motor that comprises a variable frequency machine drive [col. 4 lines 47-52].

Knox and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to variable frequency control capability to Knox, as taught by Hollenbeck, for the purpose of including the benefits of variable frequency control to the motor. Variable frequency machine drives are a well known and desirable means of controlling induction motors because this is an efficient means of motor control that results in less wasted power.

**Claims 10-11, 22-23, and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haudry et al., U.S. Patent No. 6,879,230, in view of Hollenbeck, Patent No. 5,557,182.**

With respect to Claims 10, 22, and 58, Haudry teaches the controller of Claims 1 and 16 respectively, but does not teach a soft start machine controller. Hollenbeck teaches a control unit that comprises a soft start machine controller [col. 12 lines 13-14].

Haudry and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made

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to specify soft start control capability to Haudry, as taught by Hollenbeck, for the purpose of including the benefits of soft start control to the motor. Soft start capability is desirable to prevent stressing the power supply as well as the motor windings from sudden loading, which is well-known to shorten the lifespan of electrical equipment.

With respect to Claims 11, 23, and 57, Haudry teaches the controller of Claims 1 and Claims 16 respectively, but does not teach a variable frequency machine drive. Hollenbeck teaches a control unit for a motor that comprises a variable frequency machine drive [col. 4 lines 47-52].

Haudry and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify variable frequency control capability to Haudry, as taught by Hollenbeck, for the purpose of including the benefits of variable frequency control to the motor. Variable frequency machine drives are a well-known and desirable means of controlling induction motors because this is an efficient means of motor control that results in less wasted power.

**Claims 1, 2-9, 12-13, 15-16, 17-21, 24, 26, 27-28, 30-31, 32, 34, 51-56, 59, 60-68, 70, 72-74, and 76-78 are rejected under 35 U.S.C. 102(b) as being obvious in view of Haudry et al., U.S. Patent No. 6,879,230.**

With respect to Claims 1, 16 and 51, Haudry discloses a machine, comprising: a motor [col. 4 lines 7-16]; and a motor controller [Fig. 1], comprising: a modular base

[Fig. 1, housing 1] comprising motor protection circuitry [Fig. 1; 14, 16, 18]; such as a short circuit [col. 2 lines 40-50] tripping disconnect [Fig. 1, 16 and trip device 18] which is mounted in the base [as shown in Fig. 1]; and a modular motor control unit [Fig. 1; comprising protection and control module 2 with removable control or communication module 3] coupled to the modular base [Fig. 3; col. 2 lines 34-38; col. 3 lines 5-15] and comprising motor control circuitry [col. 1 lines 24-33; col. 4 lines 7-16] cooperatively operable with the motor protection circuitry, wherein the modular motor control unit is selectively replaceable from a plurality of different types of motor control units [col. 3 lines 5-10; col. 3 lines 41-44; col. 3 lines 54-62; col. 3 lines 63-67; col. 4 lines 7-16].

Haudry does not explicitly disclose that Fig. 1 housing 1 is mounted on a motor; however, this is an obvious and trivial modification to make based on what is conventionally known in the art; and one of ordinary skill would mount Haudry's Fig. 1 housing 1 to a motor for the well-known benefit of accomplishing local, onsite control/protection of the motor. At the very least, this is known to reduce wiring costs of the installation.

With respect to Claims 27, 31 and 34, Haudry discloses a controller [Fig. 1] for a system of distributed machines [col. 4 lines 7-15; the motor, the motor's load, mechanical subassembly 14], comprising: a machine mountable base [Fig. 1, DIN rail on housing 1], comprising: a short-circuit protective device [col. 2 lines 40-50]; and a disconnect device [Fig. 1, 16 and trip device 18]; and a modular control unit [Fig. 1; comprising protection and control module 2 with removable control or communication module 3] replaceably mountable to the machine mountable base [Fig. 3; col. 2 lines

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34-39, col. 3 lines 5-15] wherein the modular control unit comprises control circuitry configured to control at least one machine [col. 4 lines 7-15; the motor, the motor's load, mechanical subassembly 14] in the system of distributed machines.

With respect to Claims 2-9, 12-13, 15, 17-21, 24, 26, 28, 30, 32, 52-56, 59, and 60-63, see above remarks and Haudry's disclosure.

With respect to Claims 64, 66, 68, 70, 72 and 74, Haudry discloses that the modular control unit comprises an output connector [Fig. 3, power terminal blocks 13b] configured to couple with the machine/at least one of the machines [the motor being controlled col. 4 lines 7-16; the cable is the power cables connected to power terminal block 13b to supply the motor; col. 1 lines 63-67].

With respect to Claims 65, 67, and 73, Haudry discloses that the modular control unit is selected from and interchangeable with a plurality of modular control units, each having different control circuitry [col. 3 lines 5-10; col. 3 lines 41-44; col. 3 lines 54-62; col. 3 lines 63-67; col. 4 lines 7-16].

With respect to Claims 76-78 [new], Haudry discloses the on-machine motor protection base comprises a short-circuit protective device [Fig. 1, 16 and trip device 18; col. 2 lines 40-50] housed therein.

### **Response to Arguments**

Applicant's arguments received 02/13/2008 have been fully considered but they are not persuasive.

Applicant's concern on page 12 of REMARKS that "the examiner's maintenance of the claim rejection in view of Knox is improper" is misplaced. The following statement

below quoted from the action dated 11/13/2007 makes it explicitly clear that the new grounds of rejection portion of the action is only those claims rejected under Houf.

***“Applicant’s final argument on page 5 is that Knox does not teach interchangeable control units, each having different control circuitry. Knox discloses interchangeable control units (user interface 2). However, it is agreed that since the units are identical in nature, they cannot have different control circuitry as applicant’s limitations intend. New grounds of rejection under Houf et al. Patent Number 4769557 are presented for this limitation.”***

Implicit to this statement is that the Pre Appeal review panel decision was in agreement with the examiner and upheld the rejection under Knox, disagreeing only with those claims (65, 67, 69, 71, 73, and 75) that recited modules with different functionality/circuitry. For this reason, the rejection under Knox (with respect to these claims **only**) were withdrawn, and a new ground of rejection under Houf was introduced. The remaining claims recited above [some currently amended] stand rejected under Knox.

On page 15, applicant argues that ground fault is not short circuit protection. The examiner’s stance that ground fault is a type of short circuit, specifically a short to ground, is already of record, with the corroborating ECM document. If applicant wishes to enter a new reference [i.e. NEC 70-29] for the examiner to review per the definition of short circuit, then applicant is requested to submit a copy for the record. Otherwise, the examiner’s stance is that Knox discloses short circuit protection, as indicated in the action above.

All other arguments have either been addressed before, with regards to Knox, and the examiner's views are the same as previously stated on the record. All arguments with respect to Houf are now moot, in view of new grounds of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dharti H. Patel whose telephone number is 571-272-8659. The examiner can normally be reached on 7:00 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2800, Ext. 36. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Sherry/

Supervisory Patent Examiner, Art Unit 2836

/Dharti H Patel/

Examiner, Art Unit 2836

6/23/2008